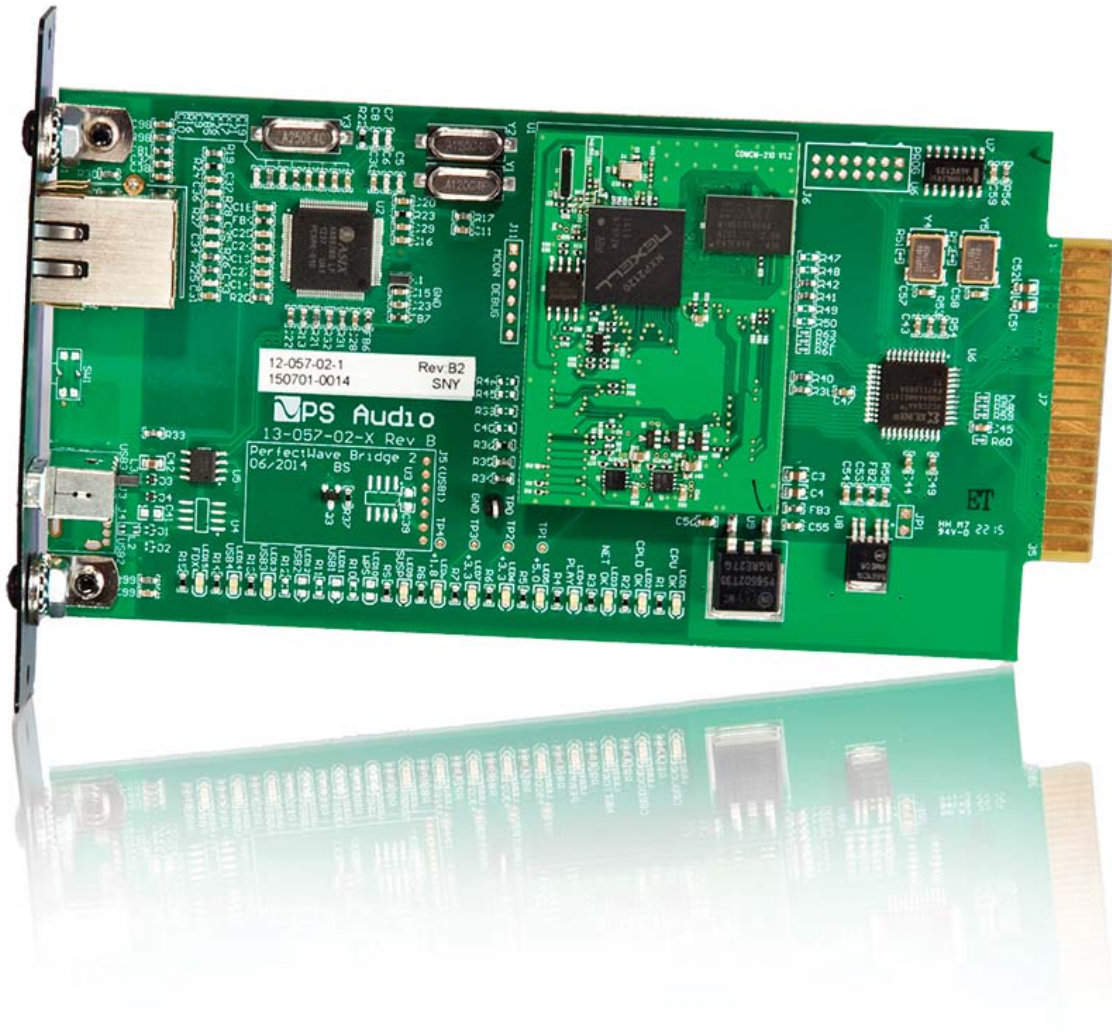




Owner's Reference

Owner's Reference Network Bridge II

Instructions for Installation and Use



Network Bridge II™

4826 Sterling Drive, Boulder, CO 80301
PH: 720.406.8946 service@psaudio.com www.psaudio.com

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Introduction

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Important Safety Instructions



Read these instructions
Heed all warnings
Follow all instructions



WARNING. TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

Clean only with a dry cloth.

Do not place flammable material on top of or beneath the component.

All PS Audio components require adequate ventilation at all times during operation. Rack mounting is acceptable where appropriate.

Do not remove or bypass the ground pin on the end of the AC cord unless absolutely necessary to reduce hum from ground loops of connected equipment. This may cause RFI (radio frequency interference) to be induced into your playback setup. All PS products ship with a grounding type plug. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. Unplug this apparatus during lightning storms or when unused for long periods of time.

When making connections to this or any other component, make sure all components are off. Turn off all systems' power before connecting the PS Audio component to any other component. Make sure all cable terminations are of the highest quality.

There are no user serviceable fuses inside this product.

THERE ARE NO USER-SERVICEABLE PARTS INSIDE ANY PS AUDIO PRODUCT. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL

Please contact your authorized dealer, distributor, or PS Audio if you have any questions not addressed in this reference manual.

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The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are in the papers with the appliance.



The lightning flash with arrow-head within a triangle is intended to tell the user that parts inside the product are a risk of electric shock to persons.





Introduction

Owner's Reference Network Bridge II

Thank You

Thank you for your purchase of the PS Audio Network Bridge II.

The Network Bridge II is a slide-in PC board designed to be inserted in the Bridge slot of either a PS Audio PerfectWave DAC or PS Audio DirectStream DAC. Once inserted and installed, the Network Bridge II connects the DAC with a home network.

UPnP Device

The Network Bridge II is a UPnP (Universal Plug and Play) rendering device that fits into a UPnP based system of network audio, consisting of three necessary elements: Controller, Server, Renderer. In a UPnP based music system, the controller serves as the user interface, the server is associated with the stored music (stored on a computer hard drive, or NAS), and the renderer (Bridge II) converts the network-fed music to a form acceptable to a DAC.

Part of a System

The Network Bridge II can handle PCM data up to 192kHz 32 bits, and single rate DSD.

Less Sensitive to Jitter

A UPnP rendering device, like the Network Bridge II, converts digital audio signals sent over a local area network (LAN) to I²S data the DAC understands as music. Once the data has been converted, the PWD or DSD DAC can playback the music as if it were any other digital input. Unique to the Network Bridge II is a Digital Lens built into its output. The Digital Lens reduces jitter in network audio to nearly imperceptible levels

The other required elements in a UPnP based network audio system, the server and controller, are external to the Network Bridge II. UPnP servers are typically found on NAS (Network Attached Storage) device, or computer programs such as JRiver Media Center. Controllers are typically UPnP apps hosted on mobile devices, such as an Android or Apple product.

This manual will make suggestions based on our recommended peripheral programs for proper Bridge II operation.

Installation

Installation

The PerfectWave Network Bridge II must first be installed inside either a PerfectWave DAC (PWD) or a DirectStream DAC (DSD) unless you bought one of these DACs with the Bridge preinstalled, or you purchased a DirectStream Junior. The Network Bridge II is built into DirectStream Jr (DSJ). No installation is required for DSJ.

Both the PWD and DSD have slots in the rear of the unit to accept the Network Bridge II.

Install the Bridge II



Turn Off the Power

Turn off the DAC using the power switch on the rear of the unit.

Remove the Slot Cover

Using a Phillips screwdriver (#1 tip), remove the two screws holding the blank panel over the expansion slot on the rear of the PerfectWave DAC.

Retain the screws to hold the Bridge card in place later.

Follow the instructions on the bag of the disposable wrist strap included in the box. Connect the alligator clip to a suitable earth ground.

Remove the PerfectWave Bridge printed circuit board assembly from the ESD bag.

Insert the Bridge Card

Insert the Bridge card into the expansion slot. Slide the board in the rail guides. You will feel some resistance when the connector mates with the fingers on the front of the Bridge card. Press firmly until the surface of the Bridge card back panel contacts the back of the DAC.



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Reinstall the screws to hold the Bridge card in place.

You may now remove the wrist strap.

It may be necessary to update the firmware in your DAC before using Bridge II. If you have a PerfectWave MKI or MKII DAC with firmware older than 2.9.1, or a DirectStream DAC with firmware older than Yale, choose the appropriate SD card and use it to update the DAC. Bypass the section in the manual on updating firmware if your version is current.

Insert the SD Card Insert the SD card into the slot on the back of the DAC. When pressed all the way it will hold itself in. Do not force it. It should slide easily if inserted properly. This SD card plugs into the socket with the gold contacts facing up. Make sure the SD card has the gold contacts facing up, or the socket could be damaged.

Gold Pins Face Up Verify that the tab on the side of the SD card from the Bridge shipping box is in the unlocked position – towards the top.

Turn the DAC Power On Turn on the power to the DAC through its rear panel switch. You should observe the logo light button on the front panel of the DAC blinking. This will take approximately 30 seconds. When the blinking stops you will see the initialize screen on the display. The DAC should power up normally. It is now updated with the software necessary to run the Bridge.

Connect an Ethernet Cable Connect an Ethernet cable from a network switch, router, or hub to the Ethernet port on the Bridge card back panel.

Check to see if the Bridge requires a firmware update. To do this you must be connected to the Internet. Once connected, go to the Input Select screen on the PWD or DirectStream's touch screen. On the Media Bridge input select choice, touch the green edit icon on the right hand side. This brings you to the Bridge setup page where you can touch the option to upgrade the firmware. If you have a DAC without a touchscreen, press the button by the display for 3 seconds to enter the setup mode, and then press the button several times until it takes you to the bridge setup screen. If an update is available it will show you. Then a long press of the button will initiate the update process. A short press will take you to the next setup screen. Once upgrading DO NOT REMOVE POWER WHILE THE BRIDGE IS UPDATING.



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The Bridge Offers Far More Than Standard Inputs

Once Bridge II is installed in the DirectStream, PerfectWave, or activated in DirectStream Junior (it is built into Junior), your new DAC can become far more than a high-performance stereo unit. The Bridge II allows playback from a source not directly connected to the DAC using a UPnP protocol and separately available controller and server, such as a NAS.

The Network Bridge II incorporates the exact same Digital Lens™ technology found in the PerfectWave Transport (PWT) – without the input to the Lens being from a nearby source. Instead, the input to the internal Lens of the Bridge II is over a network: addressable through an Ethernet connection. Music stored on a hard drive or even an Internet radio service are all accessible via the Network Bridge II.

Bridge II Operation

Bridge II Operation

The PS Audio Network Bridge II provides network connectivity to a media server or NAS. The Network Bridge is a UPnP compatible device, requiring a UPnP server and controller to stream to the Bridge. A program like JRiver Media Center, available on both Mac and Windows platforms, can be configured to act as both a UPnP server and Controller. Many NAS come with UPnP servers built into their operating systems. If you use a NAS, you will control the NAS and Bridge through the use of a UPnP controller, typically via a mobile device, such as a tablet or phone, that have a UPnP compatible controller app, such as PlugPlayer, or MConnect.

Connect to The Router

To use the Bridge the rear panel Ethernet connector must be plugged into your home router through a CAT5 Ethernet cable. A WIFI Ethernet Bridge can also be used. Once connected, the Bridge should be visible on the network to a controller that is also on the home network via WIFI or hard wired through CAT 5. Select the PS Audio Bridge, or whatever friendly name you have set for the Bridge, to connect the UPnP server. Once connected, change the DAC's input to the one labeled the same as the Bridge Friendly name. You should now be able to stream music to the Bridge.



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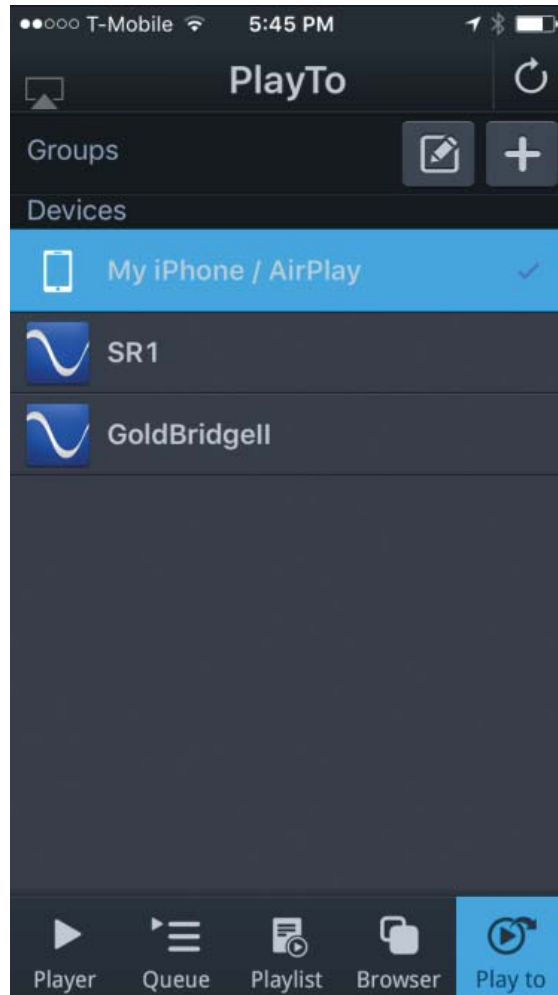
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Using JRiver
Media Center



If you are using JRiver Media Center, it will be necessary to turn JRiver's DLNA/UPnP server on to recognize the Bridge. Make sure the computer running JRiver Media Center is connected to the same router/home network as the PS Audio Network Bridge. In JRiver go to Tools->Options->Media Network and check mark the box that reads: Use media network to share this library and enable DLNA.

Using a NAS



Follow instructions and, once setup, the Bridge should appear in the JRiver Media Center far left window under Playing Now. Select the Bridge and you should be connected.

For a controller on a mobile device, when using JRiver Media Center, install JRemote on your phone or tablet.

If you are using a NAS and mobile controller, the Bridge should be visible on the controller app's connect screen. The image shows MController (from MConnect) and the screen you go to for connection to the Bridge. In this case, the Bridge friendly name has been set, as GoldBridgell. There is another, second Bridge in this image, labeled SR1. Choose the Bridge you wish to stream to.

To select the NAS or UPnP server of any type, in MController, touch the lower icon that says Browser. Choose the server you wish to connect to, or VTuner, for internet radio access.

MConnect's MController app is our recommended mobile platform UPnP controller and is available for both Android and Apple tablets and phones.



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Network Settings

Network Settings

It is sometimes useful to find out the network setting when you have the Network Bridge connected to your home network through the router. To discover the network setting on a DAC without a touchscreen, go to the setup menu by pressing and holding the front panel selector button for 3 seconds. Toggle through the screens by multiple button presses until you arrive at the Network Setting screen. On a DAC with a touchscreen, go to the input select screen and touch the green edit icon to take you to the bridge edit screen. Touch the green edit icon underneath the network icon to take you to the network setup screen.

Bridge Updates

Bridge Updates

From time to time the Network Bridge will receive firmware updates when available. The update notifications can be accessed over the internet if the Network Bridge is properly connected to the home network router, which must itself be connected to the internet.

To find out if there is an update available, go to the setup menu. On a DAC without a touchscreen, press and hold the selector button for 3 seconds, then toggle to the Bridge Update screen with multiple selector button pushes. On a DAC with a touchscreen, go to the input select screen. Touch the green edit icon which takes you to the bridge edit screen. The bottom of the screen will notify you if an update is available.

Can't Connect

Can't Connect to Bridge

Most problems with the Network Bridge trace back to home networks and their routers. Make sure you have a modern, high speed router and connection to the Bridge through CAT5 network cable, not WIFI, unless through a high speed wireless Ethernet Bridge.

Make certain the server, computer, mobile device are on the same network as the Bridge. We often see this problem arise, especially with WIFI connected mobile devices. The mobile device may not be sharing the same network, through WIFI, as the home router. If you are using a mobile device, such as a phone or tablet to control the server, make sure the mobile device has WIFI enabled and is on the same network as the Bridge.

The server must be UPnP compatible. Programs like iTunes are not UPnP compatible and cannot stream over a home network. iTunes and non-UPnP compatible servers must be connected to the DAC through USB to work.

JRiver Problems

JRiver problems are common. If the Bridge is not displayed as an option to select, look under Tools->Options->Media Network and check mark the box that reads: Use media network to share this library and enable DLNA.

Follow instructions and once setup, the Bridge should appear in the JRiver Media Center far left window under Playing Now. Select the Bridge and you should be connected.

JRiver Controller

JRiver is a UPnP/DLNA server and as such can be controlled through a compatible UPnP controller, such as MConnect, PlugPlayer, or Bubble UPnP. JRiver does have its own mobile controller that works rather seamlessly with JRiver. It is called JRemote.



Warranty

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Limited Three Year Warranty

Should I Register My Product?

- Registering your product validates the warranty start date.
- If you do not register your product within 30 days of service, a copy of your purchase receipt from an authorized PS Audio dealer may be used as a proof of purchase to establish the warranty start date.
- If no proof of purchase from an authorized PS Audio dealer or registration is provided, the production date of the product will be used to determine the warranty start date.
- Registration can be completed online, by phone, by mail, or by email.
- You may wish to sign up for PS Audio's monthly newsletters, specials, product updates, and/or Paul's Daily Posts.

What Does this Warranty Cover?

This warranty covers defects in material and workmanship for products purchased from PS Audio or its authorized dealers and agents.

What Will PS Audio Do to Correct the Problem?

In the event your product fails your sole remedy under this limited warranty shall be to return the product to PS Audio or an authorized PS Audio repair center. The product will be repaired without charge for parts or labor, replaced, or the purchase price refunded through the original point of purchase, at the option of PS Audio.

What is the Period of Coverage?

This limited warranty is in effect for 3 years from the date the unit was first purchased from PS Audio or its dealers and agents.

Who Pays for Shipping?

You are responsible to pay for the safe and proper shipment of the warranted product to PS Audio or its authorized repair center.

PS Audio or its authorized repair center will pay the cost of returning the repaired or replacement product to you under this warranty.

What Does this Warranty Not Cover?

- **This warranty does not cover damage due to:** Accidents, carelessness, improper transportation, misuse, neglect, or abuse
- Failure to follow the operating instructions that are provided by PS Audio in the owner's manuals (available for download at psaudio.com)
- Use in any manner inconsistent with PS Audio's operating instructions (available for download at psaudio.com)
- Lack of routine maintenance
- Connection to an improper voltage supply



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- Alterations or modifications to the unit
- Improper or unauthorized repair, including repairs not authorized by PS Audio or a PS Audio authorized repair center
- Fire, lightning, flood, "acts of God," or other contingencies beyond the control of PS Audio
- Products purchased through an unauthorized source (if you have questions as to whether or not a dealer is authorized, please contact customer support at psaudio.com)
- Products with a factory-applied serial number that has in any way been altered, defaced, or removed

Limitations on PS Audio's Obligations Under this Warranty

- In no event will PS Audio's liability to you exceed the original purchase price of the unit.
- This warranty does not cover the cost of custom installation, customer instruction, setup adjustments, or signal reception problems.
- This warranty does not cover consequential and incidental damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
- In the event your warranted product cannot be repaired, PS Audio will replace or refund the unit. We reserve the right to replace any out-of-stock, discontinued, or limited edition products with a comparable product. Discontinued products may not be available for warranty replacement.

How Can the Warranty be Transferred?

This warranty is for the benefit of the original purchaser of the product. The warranty may be transferred to a subsequent purchaser during the 3 year warranty period. To do this, you must contact PS Audio directly to set up transfer of registration.

How Do I Get Warranty Service?

To locate an authorized PS Audio repair center, for service assistance, or for help with the operation of a product or just for information, please contact PS Audio customer support.

Warranty Service Within the US

- You must first obtain a Return Merchandise Authorization Number (RMA#) to receive warranty service and prior to returning any item. Contact PS Audio or an authorized PS Audio repair center to receive an RMA#.
- You must put the RMA# on all returns. If it is not clearly marked, PS Audio will return the package back to you, freight collect.
- You should include a description of the problem, along with the RMA# inside the packaging.
- Original packaging should be used for the safe transit of your PS Audio unit to the repair center. If you do not have the original packing, PS Audio can sell and ship to you replacement packaging.
- You are responsible for the cost of shipping the product to a PS Audio authorized repair center. You should insure the product for its full retail cost in the event it gets lost or damaged in transit. PS Audio is not responsible for damage incurred in products sent to us.
- Shipping your product in non-PS Audio packaging may void this warranty. PS Audio reserves the right to charge you for new factory packaging to return your product after a repair.



Warranty

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How State Law Applies

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Warranty Service Outside of the US

PS Audio has authorized distribution in many countries of the world. In each country, the authorized importing distributor has accepted the responsibility for warranty of products sold by that distributor. Warranty service should be obtained where the product was purchased.

Changes to Our Products

PS Audio reserves the right to modify the design of any product without obligation to purchasers of previously manufactured products and to change the prices or specifications of any products without notice or obligation to any person.

PS Audio Inc.
4826 Sterling Dr.
Boulder, CO 80301
Phone - 720.406.8946
Fax - 720.406.8967
Email - service@psaudio.com
Web - psaudio.com